



800.452.4462 (Office) 800.533.8918 (Fax) 672 Fiesta Drive • Newell, WV 26050-1077 www.hlcdinnerware.com

The Homer Laughlin China Company®  
www.hlchina.com

Kenilworth Trading Company, LLC®  
www.kenilworthllc.com

The Hall China Company®  
www.hallchina.com

January 15, 2016

West Virginia DEP  
Division of Air Quality  
Attn: Bev McKeone  
601 57th St.  
Charleston, WV 25304

The Homer Laughlin China Company Permit R13-2164 D  
Class II Administrative Update

Dear Ms. McKeon:

The Homer Laughlin China Company (HLC) requests a Class II Administrative Update to Permit R13-2164D. The update includes the changes in emission points with emission increases less the conditions requiring a modification as defined under 45CSR13 section 2.17. Therefore, these updates are classified as a Class II Administrative Update as defined in 45CSR13 Section 4.2.b.1. Additionally, an Application for Permission to Commence Construction in Advance of Permit Issuance will be filed as required under 45CSR13 Section 16. This application will be filed separately.

All required attachments are included with this permit application for the requested Class II Administrative Update. Enclosed is a check for \$300.00 for the required fee. The Homer Laughlin China Company looks forward to your response.

Please contact me if you have any questions or are in need of additional information.

Sincerely,

Sean Adkins, P.E.  
Chief Engineer  
sadkins@homerlaughlin.net  
304-387-1300 ext. 1423

# The Homer Laughlin China Company

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Application for Class II Administrative Update

Permit# R13 -2164D

1/4/2016



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**DIVISION OF AIR QUALITY**

601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0475  
www.dep.wv.gov/daq

**APPLICATION FOR NSR PERMIT  
AND  
TITLE V PERMIT REVISION  
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION     MODIFICATION     RELOCATION  
 CLASS I ADMINISTRATIVE UPDATE     TEMPORARY  
 CLASS II ADMINISTRATIVE UPDATE     AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT     MINOR MODIFICATION  
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

**FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.**

**Section I. General**

1. Name of applicant (as registered with the WV Secretary of State's Office): The Homer Laughlin China Company		2. Federal Employer ID No. (FEIN): 5 5 0 2 1 5 0 7 0	
3. Name of facility (if different from above):		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: 672 Fiesta Drive  Newell, WV 26034		5B. Facility's present physical address: 672 Fiesta Drive  Newell, WV 26034	
6. <b>West Virginia Business Registration.</b> Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – If YES, provide a copy of the <b>Certificate of Incorporation/Organization/Limited Partnership</b> (one page) including any name change amendments or other Business Registration Certificate as <b>Attachment A</b> . – If NO, provide a copy of the <b>Certificate of Authority/Authority of L.L.C./Registration</b> (one page) including any name change amendments or other Business Certificate as <b>Attachment A</b> .			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation:			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – If YES, please explain:    The Homer Laughlin China Company(HLC) owns the building and property. – If NO, you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be <b>constructed, modified, relocated, administratively updated</b> or <b>temporarily permitted</b> (e.g., coal preparation plant, primary crusher, etc.): Dinnerware Manufacturer		10. North American Industry Classification System (NAICS) code for the facility:  327110	
11A. DAQ Plant ID No. (for existing facilities only): 0 2 9 - 0 0 0 1 7		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R13-2164D	

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

12A.

- For **Modifications, Administrative Updates or Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction or Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP as Attachment B**.

12.B. New site address (if applicable): N/A	12C. Nearest city or town: Newell	12D. County: Hancock
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12.E. UTM North ng (KM): 4496.7	12F. UTM Easting (KM): 533.25	12G. UTM Zone: 17
---------------------------------	-------------------------------	-------------------

13. Briefly describe the proposed change(s) at the facility:  
Permit Level Changes, Equipment Changes and Souce Description Changes

14A. Provide the date of anticipated installation or change: N/A - If this is an <b>After-The-Fact</b> permit application, provide the date upon which the proposed change did happen: / /	14B. Date of anticipated Start-Up if a permit is granted: N/A
---	--

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:  
Hours Per Day 24      Days Per Week 7      Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved?     **YES**       **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see [www.epa.gov/ceppo](http://www.epa.gov/ceppo)), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

**Section II. Additional attachments and supporting documents.**

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**) .  
- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.  
- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

**All of the required forms and additional information can be found under the Permitting Section of DAQ’s website, or requested by phone.**

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.  
 – For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

<input type="checkbox"/> Bulk Liquid Transfer Operations	<input type="checkbox"/> Haul Road Emissions	<input type="checkbox"/> Quarry
<input type="checkbox"/> Chemical Processes	<input type="checkbox"/> Hot Mix Asphalt Plant	<input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities
<input type="checkbox"/> Concrete Batch Plant	<input type="checkbox"/> Incinerator	<input type="checkbox"/> Storage Tanks
<input type="checkbox"/> Grey Iron and Steel Foundry	<input type="checkbox"/> Indirect Heat Exchanger	
<input checked="" type="checkbox"/> General Emission Unit, specify Spray Operations		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

<input type="checkbox"/> Absorption Systems	<input type="checkbox"/> Baghouse	<input type="checkbox"/> Flare
<input type="checkbox"/> Adsorption Systems	<input type="checkbox"/> Condenser	<input type="checkbox"/> Mechanical Collector
<input type="checkbox"/> Afterburner	<input type="checkbox"/> Electrostatic Precipitator	<input checked="" type="checkbox"/> Wet Collecting System
<input checked="" type="checkbox"/> Other Collectors, specify Cartridge Filter		

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

➤ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES       NO

➤ If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's **"Precautionary Notice – Claims of Confidentiality"** guidance found in the **General Instructions** as **Attachment Q**.

### Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

<input checked="" type="checkbox"/> Authority of Corporation or Other Business Entity	<input type="checkbox"/> Authority of Partnership
<input type="checkbox"/> Authority of Governmental Agency	<input type="checkbox"/> Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R**.

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

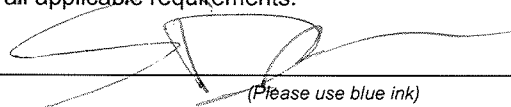
**Certification of Truth, Accuracy, and Completeness**

I, the undersigned  **Responsible Official** /  **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

**Compliance Certification**

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE \_\_\_\_\_



(Please use blue ink)

DATE: \_\_\_\_\_

1/15/16  
(Please use blue ink)

35B. Printed name of signee: Sean Adkins

35C. Title: Chief Engineer

35D. E-mail: sadkins@homerlaughlin.net

35E. Phone: 304/387-1300 Ext. 1423

35F. FAX: 304/387-1427

36A. Printed name of contact person (if different from above):

36B. Title:

36C. E-mail:

36D. Phone:

36E. FAX:

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate               | <input type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet                       |
| <input checked="" type="checkbox"/> Attachment B: Map(s)                             | <input type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s)                                |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input checked="" type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s)            |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion              | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations                |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan                          | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s)   | <input type="checkbox"/> Attachment P: Public Notice   |
| <input checked="" type="checkbox"/> Attachment G: Process Description                | <input type="checkbox"/> Attachment Q: Business Confidential Claims                                |
| <input checked="" type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input checked="" type="checkbox"/> Attachment R: Authority Forms                                  |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table               | <input type="checkbox"/> Attachment S: Title V Permit Revision Information                         |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee  |

*Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.*

**FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:**

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
  - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
  - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
  - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
  - NSR permit writer should notify a Title V permit writer of draft permit,
  - Public notice should reference both 45CSR13 and Title V permits,
  - EPA has 45 day review period of a draft permit.

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

# Attachment A

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## Certificate of Authorization

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

# State of West Virginia



## Certificate

*I, Natalie E. Tennant, Secretary of State of the  
State of West Virginia, hereby certify that*

**THE HOMER LAUGHLIN CHINA COMPANY**

a corporation formed under the laws of Delaware filed an application to be registered as a foreign corporation authorizing it to transact business in West Virginia. The application was found to conform to law and a "Certificate of Authority" was issued by the West Virginia Secretary of State on November 17, 1936.

I further certify that the corporation has not been revoked by the State of West Virginia nor has a Certificate of Withdrawal been issued to the corporation by the West Virginia Secretary of State.

Accordingly, I hereby issue this

## CERTIFICATE OF AUTHORIZATION

Validation ID:7WV59\_Y6TQY

*Given under my hand and the  
Great Seal of the State of  
West Virginia on this day of  
January 12, 2016*



*Natalie E. Tennant*

*Secretary of State*



# Attachment B

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## Directions to Facility

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**



1. Follow WV State Route 2 South from Chester

2.3 mi  
3 minutes

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2. Turn right onto 6th St.

0.1 mi

- 6th St is 0.1 miles past 5th St
  - 7-ELEVEN is on the corner
- 



3. Turn left onto Harrison St

0.1 mi

---



4. 672 FIESTA DR is on the right.

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# Attachment C

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## Installation and Startup Schedule

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

**The Homer Laughlin China Company  
Application Construction of Stationary Source January '16**

**INSTALLATION AND STARTUP SCHEDULE**

Operation of Source ID 005-0G will begin upon receipt of the permit. Homer Laughlin intends to apply for a Section 16 Application for Permission to Commence Construction in Advance of Permit Issuance.

# Attachment C

---

## Installation and Startup Schedule

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

**The Homer Laughlin China Company  
Application Construction of Stationary Source January '16**

**INSTALLATION AND STARTUP SCHEDULE**

Operation of Source ID 005-0G will begin upon receipt of the permit. Homer Laughlin intends to apply for a Section 16 Application for Permission to Commence Construction in Advance of Permit Issuance.

# Attachment D

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## Regulatory Discussion

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

**The Homer Laughlin China Company  
Application Construction of Stationary Source January '16**

**REGULATORY DISCUSSION**

The Homer Laughlin China Company is a Synthetic Minor Air Emission Source (Permit Number R13-2164C); having taken an emission limitation for VOC of less than 100TPY in originally 2006. Other criteria pollutant potential emissions are less than the applicable major source thresholds without supplemental restriction.

The changes to operating parameters will not impact the facility's Synthetic Minor status and is therefore not subject to C.S.R. § 45-30 permitting.

Consistent with the Operating Permit for current glazing operations, the sources are subject to the following regulatory criteria:

Applicable Requirement	Pollutant / Parameter	Limit / Standard
C.S.R. § 45-7-3.1.	Particulate Matter	20% Opacity
C.S.R. § 45-7-4.1.	Particulate Matter (Total)	32.9 pph (based on Table 45/7a (Type "c"))
C.S.R. § 45-7-4.8.	Particulate Matter (Source)	2.99 pph
C.S.R. § 45-7-4.13.	Hazardous Particulate Matter	Evaluate Adequacy, Efficiency, and Emission Potential

The proposed construction will not affect compliance with C.S.R. § 45-13-2.24.



# Attachment E

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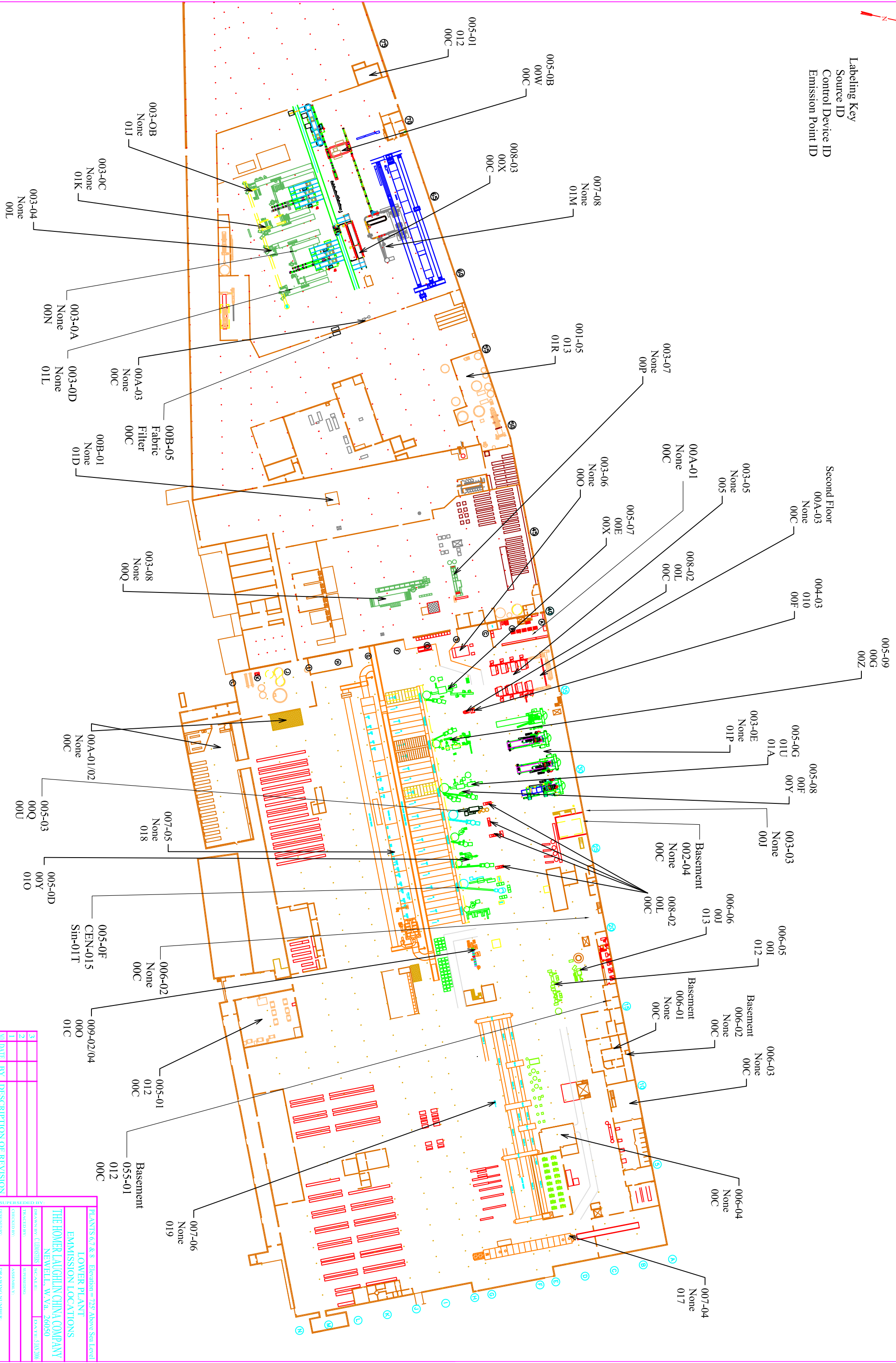
## Plot Plan

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**



Labeling Key  
 Source ID  
 Control Device ID  
 Emission Point ID



NO	DATE	BY	DESCRIPTION OF REVISION
1			
2			
3			

SUPERSEDED BY:	
DESIGNED BY:	DRAWN BY:
CHECKED BY:	SCALE:
DATE:	DATE:
PROJECT:	PROJECT:
NO.:	NO.:
DATE:	DATE:

PLANTS 67 & 8 Elevation = 75' Above Sea Level  
 LOWER PLANT  
 EMISSION LOCATIONS  
 THE HOMER LAUGHLIN CHINA COMPANY  
 NEWELL, W. Va. 26050

# Attachment F

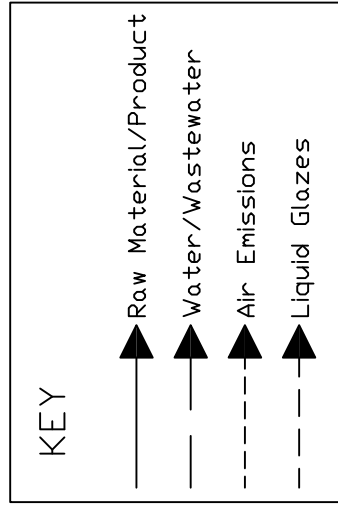
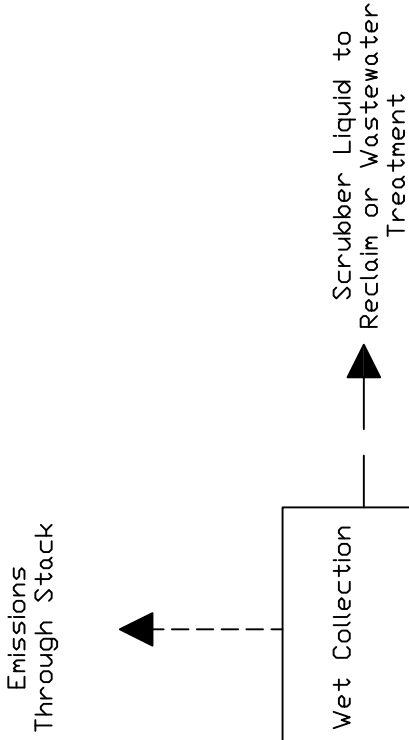
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## Process Flow Diagrams

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

Spray Operation Name	Booth ID	Control Device ID	Emission Point ID
#6 One Fire Line #6 Booth 2	005-0G	01U	01A



Liquid Glazes  
Unfired Clay Ware

Glazed Ware

Figure\_ Process Flow Diagram  
Listed Spray Booths

The Home Laughlin Clay Co.  
and Home Laughlin Clay Co. 2000

NO.	DATE	BY	DESCRIPTION OF REVISION
4			
3			
2			
1			

DRAWN: [ ]  
 CHECKED: [ ]  
 SUPERVISING: [ ]  
 ASSEMBLY: [ ]  
 FACILITY: [ ]  
 DRAWING: [ ]

# Attachment G

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## Process Description

R13 -2164D Permit Application for Construction of Stationary Source

**1/4/2016**

**The Homer Laughlin China Company  
Application Construction of Stationary Source December '15**

**SPRAY PROCESS DESCRIPTION**

Spray Processes			
Spray Operation Name	Booth ID	Control Device ID	Emission Point ID
#6 One Fire Line #6 Booth 2	005-0G	01U	01A

Emission Units consists of a Spray booth for applying glaze to wares, a control device for collection of overspray, and a stack emission point.

The unfired clay wares are mounted on spindles, which travel on a conveyor through the spray glazing line. The conveyor travels at a variable speed from the load area into the spray booth, and then to the unloading area.

The liquid glaze is automatically applied in the spray booth. The spindles rotate to ensure even application of the glaze. The spray booth is constructed of stainless steel. It is open on two sides for the pass-through conveyor and equipped with its own exhaust system. The booth is equipped with a hood in front and on top, and baffle in the back to contain the spray. Liquid glaze is returned using a pump to a supply tank.

A settling chamber is attached to the back of the spray booth. Overspray travels through a baffle system in the chamber to improve settling of glaze material from air stream. A collection tank is attached to chamber for liquid glaze to collect and returned to a tank for reuse.

The exhaust system captures all overspray (i.e. extra glaze that is not captured by the ware or the baffles of the setting chamber). The exhaust system vents to wet collectors (as Listed), which controls particulate emissions to the atmosphere. The wet collector vents through emission points as listed.

From the unloading area, the conveyors pass through the spindle water wash system, returning the perfectly clean spindles to the load position. The spray booth is manually washed down approximately once per day.

# Attachment H

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## MSDS for Glaze Components

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Arctic White Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Arctic White Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** White liquid

**Color:** White

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt	1307-96-6		0.02 mg/m <sup>3</sup>	< 0.1

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None



Homer Laughlin China Company

672 Fiesta Drive  
Newell, West Virginia 26050  
304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Arctic White Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

672 Fiesta Drive  
Newell, West Virginia 26050  
304-387-1300

PRODUCT NAME: Arctic White Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

9. SPECIAL PROTECTION INFORMATION

See Addendum:

Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

10. HANDLING AND STORAGE

See Addendum:

Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

11. REGULATORY INFORMATION

See Addendum:

Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cobalt are considered carcinogens or probable carcinogens.

12. TOXICOLOGICAL INFORMATION

See Addendum:

Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

13. ECOLOGICAL INFORMATION

See Addendum:

Ref. PAGE:

**Fate in the Environment:** N/A

14. DISPOSAL CONDITIONS

See Addendum:

Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

15. TRANSPORTATION INFORMATION

See Addendum:

Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

672 Fiesta Drive  
Newell, West Virginia 26050  
304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Arctic White Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 15.9

Tin Oxide - CAS#: 18282-10-5; TLV: 2.0 mg/m<sup>3</sup>; Approx. %: 3.2Cobalt (CAS #: 1307-96-6; TLV: 0.02 mg/m<sup>3</sup>) and Aluminum (CAS #: 7429-90-5; TLV: 0.1 mg/m<sup>3</sup>).

Homer Laughlin China Company

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Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

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PRODUCT NAME:

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Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

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672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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KEY NUMBER:

**ADDENDUM for Section -**

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**ADDENDUM for Section -**



# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Black Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Black Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Black liquid

**Color:** Black

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt	1308-06-1		0.02 mg/m <sup>3</sup>	0.6 - 0.7
Chromium	1308-38-9		0.5 mg/m <sup>3</sup>	0.5 - 0.8
Zinc Oxide	1314-13-2		2.0 mg/m <sup>3</sup>	2.5 - 2.7
Nickel	1313-99-1		1.5 mg/m <sup>3</sup>	0.3

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Black Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Black Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum:

Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum:

Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum:

Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Nickel, and Cobalt are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum:

Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum:

Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

672 Fiesta Drive  
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304-387-1300

PRODUCT NAME: Black Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 17.8

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 0.7

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Blueberry Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company  
 672 Fiesta Drive  
 Newell, West Virginia 26050  
 304-387-1300

<b>HEALTH</b>	<b>1</b>	Slightly Hazardous
---------------	----------	--------------------

<b>FIRE</b>	<b>0</b>	Will Not Burn
-------------	----------	---------------

<b>REACTIVITY</b>	<b>0</b>	Stable
-------------------	----------	--------

<b>SPECIFIC</b>		-
-----------------	--	---

## 1. IDENTIFICATION

See Addendum: Ref. PAGE:

**Chemical Name:** Blueberry Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum: Ref. PAGE:

**Appearance:** Blue/purple liquid

**Color:** Blue/purple

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum: Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	0.7 - 0.8
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	< 0.1
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	< 0.1

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum: Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
 in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

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304-387-1300

PRODUCT NAME: Blueberry Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum:

PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum:

PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum:

PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum:

PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

672 Fiesta Drive  
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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Blueberry Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, and Nickel are carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Blueberry Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7, TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 23.1  
Copper Carbonate - CAS#: 7440-50-8; TLV: 1.0 mg/m<sup>3</sup>; Approx. %: 0.8  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.7

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Chestnut Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Chestnut Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Colored liquid

**Color:** Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	< 0.1
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	< 0.1
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	< 0.1
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	< 0.1
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	< 0.1

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

672 Fiesta Drive  
Newell, West Virginia 26050  
304-387-1300

PRODUCT NAME: Chestnut Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Chestnut Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** N/A

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired using a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, Nickel, and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Chestnut Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

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KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 5.6  
Zinc Oxide - CAS#: 1314-13-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.9  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.5

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PRODUCT NAME:

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Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

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Homer Laughlin China Company

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Newell, West Virginia 26050

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

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**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Chocolate Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company  
 672 Fiesta Drive  
 Newell, West Virginia 26050  
 304-387-1300

<b>HEALTH</b>	<b>1</b>	Slightly Hazardous
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<b>FIRE</b>	<b>0</b>	Will Not Burn
-------------	----------	---------------

<b>REACTIVITY</b>	<b>0</b>	Stable
-------------------	----------	--------

<b>SPECIFIC</b>		-
-----------------	--	---

## 1. IDENTIFICATION

See Addendum: Ref. PAGE:

**Chemical Name:** Chocolate Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum: Ref. PAGE:

**Appearance:** Brown liquid

**Color:** Brown

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum: Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	1.0
Manganese Oxide	1313-13-9		0.2 mg/m <sup>3</sup>	0.2
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	0.2
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	1.4

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum: Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Chocolate Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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PRODUCT NAME: Chocolate Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

9. SPECIAL PROTECTION INFORMATION

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

10. HANDLING AND STORAGE

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

11. REGULATORY INFORMATION

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Nickel are considered carcinogens or probable carcinogens.

12. TOXICOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

13. ECOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

14. DISPOSAL CONDITIONS

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

15. TRANSPORTATION INFORMATION

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Chocolate Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 19.7

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.5

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT NAME:

MSDS NUMBER:

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PRODUCT NAME:

MSDS NUMBER:

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PRODUCT NAME:

MSDS NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Cinnabar 568 Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company  
672 Fiesta Drive  
Newell, West Virginia 26050  
304-387-1300

<b>HEALTH</b>	<b>1</b>	Slightly Hazardous
<b>FIRE</b>	<b>0</b>	Will Not Burn
<b>REACTIVITY</b>	<b>0</b>	Stable
<b>SPECIFIC</b>		-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Cinnabar Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Red liquid

**Color:** Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.3 - 0.4
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	0.1
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	0.3 - 0.4

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Cinnabar 568 Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Cinnabar 568 Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, and Nickel are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Cinnabar 568 Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 15.2  
Tin Oxide - CAS#: 18282-10-5; TLV: 2.0 mg/m<sup>3</sup>; Approx. %: 1.0  
Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.0



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KEY NUMBER:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Cobalt Blue Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Cobalt Blue Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Blue liquid

**Color:** Blue

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	1.0 - 1.1
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.2 - 0.3
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	0.1 - 0.2

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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304-387-1300

PRODUCT NAME: Cobalt Blue Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum:

PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum:

PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum:

PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum:

PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Cobalt Blue Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, and Nickel are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A



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PRODUCT NAME: Cobalt Blue Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 18.6

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.9

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Conventional Clear Waterfall Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Conventional Clear Waterfall Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** White liquid

**Color:** White

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt	1307-96-6		0.02 mg/m <sup>3</sup>	< 0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	3.0

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Conventional Clear Waterfall Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.



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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Conventional Clear Waterfall Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

9. SPECIAL PROTECTION INFORMATION

See Addendum: Ref. PAGE:

Respiratory Protection: Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

Eye Protection: Wear safety goggles if spraying and adequate ventilation is not available.

Skin Protection: Not needed

Other Clothing: N/A

Other Equipment: N/A

Engineering Controls: Ventilation, if sprayed or fired in a kiln.

10. HANDLING AND STORAGE

See Addendum: Ref. PAGE:

Special Precautions: None

Other Precautions: N/A

11. REGULATORY INFORMATION

See Addendum: Ref. PAGE:

Workplace Classification: All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cobalt are considered carcinogens or probable carcinogens.

12. TOXICOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

Acute Data: N/A

Reproductive /  
Teratology Data: N/A

13. ECOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

Fate in the Environment: N/A

14. DISPOSAL CONDITIONS

See Addendum: Ref. PAGE:

Procedures: Follow standard local, state, and federal regulations.

15. TRANSPORTATION INFORMATION

See Addendum: Ref. PAGE:

DOT Classification: Non-hazardous mixture

Warning Labels: N/A

Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Conventional Clear Waterfall Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 20.0

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.9

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

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Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

MSDS NUMBER:

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KEY NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

**ADDENDUM for Section -**

**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Farmhouse White Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Farmhouse White Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** White liquid

**Color:** White

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Vanadium Oxide	1314-62-1		0.5 mg/m <sup>3</sup>	< 0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.4

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None



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PRODUCT NAME: Farmhouse White Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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PRODUCT NAME: Farmhouse White Glaze

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica is listed as a carcinogen.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Farmhouse White Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 15.7

Tin Oxide - CAS#: 18282-10-5; TLV: 2.0 mg/m<sup>3</sup>; Approx. %: 3.1

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Foundry Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Foundry Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Black liquid

**Color:** Black

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	1.0 - 1.1
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	1.0 - 1.1
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	0.6 - 0.8

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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304-387-1300

PRODUCT NAME: Foundry Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Foundry Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Nickel, and Cobalt are carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

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PRODUCT NAME: Foundry Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Calcined Alumina - CAS#: 1344-28-1; TLV: 1.0 mg/m<sup>3</sup>; Approx. %: 1.8  
Crystalline Silica - CAS#: 14808-60-7, TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 3.3

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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KEY NUMBER:

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# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Indigo Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Indigo Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Red liquid

**Color:** Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt	1308-06-1		0.02 mg/m <sup>3</sup>	0.3 - 0.4
Zinc Oxide	1308-38-9		5.0 mg/m <sup>3</sup>	3.8

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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304-387-1300

PRODUCT NAME: Indigo Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Indigo Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, and Nickel are carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Indigo Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

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KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7, TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 20.7  
Titanium Dioxide - CAS#: 13463-67-7 ; TLV: 10.0 mg/m<sup>3</sup>; Approx. %: 6.2  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.4

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Indigo Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Indigo Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Red liquid

**Color:** Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt	1308-06-1		0.02 mg/m <sup>3</sup>	0.3 - 0.4
Zinc Oxide	1308-38-9		5.0 mg/m <sup>3</sup>	3.8

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower N/A  
in Air % by volume: Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Indigo Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Indigo Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, and Nickel are carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Indigo Glaze

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7, TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 20.7  
Titanium Dioxide - CAS#: 13463-67-7 ; TLV: 10.0 mg/m<sup>3</sup>; Approx. %: 6.2  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.4

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PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Lapis Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Lapis Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Blue liquid

**Color:** Blue

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	0.5 - 0.6
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.1 - 0.2
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.2
Vanadium Oxide	1314-62-1		0.5 mg/m <sup>3</sup>	0.9 - 1.2

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Lapis Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Lapis Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cobalt are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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PRODUCT NAME: Lapis Glaze

MSDS NUMBER:

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KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 14.6

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.2

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Lemongrass Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

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304-387-1300

<b>HEALTH</b>	<b>1</b>	Slightly Hazardous
<b>FIRE</b>	<b>0</b>	Will Not Burn
<b>REACTIVITY</b>	<b>0</b>	Stable
<b>SPECIFIC</b>		-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Lemongrass Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Yellow/Green liquid

**Color:** Yellow/Green

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.1 - 0.3
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	0.2 - 0.3
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	<0.1 - 0.2

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower Upper N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Lemongrass Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Lemongrass Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Lemongrass Glaze

MSDS NUMBER:

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KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 18.4

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 3.8



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PRODUCT NAME:

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Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

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Homer Laughlin China Company

672 Fiesta Drive

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MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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Homer Laughlin China Company

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PRODUCT NAME:

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Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Maple Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Maple Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Orange liquid

**Color:** Orange

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	< 0.1
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	< 0.1
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.1 - 0.2
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.3 - 2.4

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Maple Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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304-387-1300

PRODUCT NAME: Maple Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A



Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Maple Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 19.6  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 4.4  
Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.8

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Marigold Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company  
 672 Fiesta Drive  
 Newell, West Virginia 26050  
 304-387-1300

<b>HEALTH</b>	<b>1</b>	Slightly Hazardous
---------------	----------	--------------------

<b>FIRE</b>	<b>0</b>	Will Not Burn
-------------	----------	---------------

<b>REACTIVITY</b>	<b>0</b>	Stable
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<b>SPECIFIC</b>		-
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## 1. IDENTIFICATION

See Addendum: Ref. PAGE:

**Chemical Name:** Marigold Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum: Ref. PAGE:

**Appearance:** Orange liquid

**Color:** Orange

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum: Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	0.4 - 0.8
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	<0.1 - 0.5
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.3 - 0.6
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	0.6 - 0.8

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum: Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower Upper N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Marigold Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.



Homer Laughlin China Company

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PRODUCT NAME: Marigold Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Marigold Glaze

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 16.2

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 4.0

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PRODUCT NAME:

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PRODUCT NAME:

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PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Moss Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Moss Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Green liquid

**Color:** Green

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	< 0.1
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.2 - 0.3
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	< 0.1
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	< 0.1
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	< 0.1

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None



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304-387-1300

PRODUCT NAME: Moss Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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PRODUCT NAME: Moss Glaze

MSDS NUMBER:

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KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, Nickel, and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

Homer Laughlin China Company

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Moss Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 17.0  
Vanadium Oxide - CAS#: 1314-62-1; TLV: 0.5 mg/m<sup>3</sup>; Approx. %: < 0.1  
Copper Carbonate - CAS#: 7440-50-8; TLV: 1.0 mg/m<sup>3</sup>; Approx. %: 3.1

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PRODUCT NAME:

MSDS NUMBER:

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PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Paprika Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Paprika Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Brown/Red liquid

**Color:** Brown/Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	1.4 - 2.4
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	5.3 - 6.3
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	< 0.1 - 0.2
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	< 0.1 - 0.2

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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304-387-1300

PRODUCT NAME: Paprika Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Paprika Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Paprika Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 11.6  
Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.7

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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**ADDENDUM for Section -**

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304-387-1300

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PRODUCT NAME:

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Pesto Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Pesto Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Brown/Red liquid

**Color:** Brown/Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Vanadium	1314-62-1		0.5 mg/m <sup>3</sup>	0.1 - 0.3

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Pesto Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Pesto Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica is considered a carcinogen.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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PRODUCT NAME: Pesto Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 18.9  
Copper Oxide - CAS#: 1317-38-0; TLV: 0.2 mg/m<sup>3</sup>; Approx. %: 1.1  
Titanium Dioxide - CAS#: 13463-67-7; TLV: 10 mg/m<sup>3</sup>; Approx. %: 6.6  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.5

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Pesto Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Pesto Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Brown/Red liquid

**Color:** Brown/Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Vanadium	1314-62-1		0.5 mg/m <sup>3</sup>	0.1 - 0.3

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Pesto Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Pesto Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica is considered a carcinogen.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Pesto Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 18.9  
Copper Oxide - CAS#: 1317-38-0; TLV: 0.2 mg/m<sup>3</sup>; Approx. %: 1.1  
Titanium Dioxide - CAS#: 13463-67-7; TLV: 10 mg/m<sup>3</sup>; Approx. %: 6.6  
Iron Oxide - CAS#: 1332-37-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.5

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Plum Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Plum Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Purple liquid

**Color:** Purple

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.1
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	0.5 - 0.6

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

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304-387-1300

PRODUCT NAME: Plum Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

672 Fiesta Drive  
Newell, West Virginia 26050  
304-387-1300

PRODUCT NAME: Plum Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

9. SPECIAL PROTECTION INFORMATION

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

10. HANDLING AND STORAGE

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

11. REGULATORY INFORMATION

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Nickel, and Cobalt are considered carcinogens or probable carcinogens.

12. TOXICOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

13. ECOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

14. DISPOSAL CONDITIONS

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

15. TRANSPORTATION INFORMATION

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Plum Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 16.8

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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Homer Laughlin China Company

672 Fiesta Drive

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

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PRODUCT CODE:

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Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

MSDS NUMBER:

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Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

MSDS NUMBER:

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PRODUCT CODE:

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Poppy Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Poppy Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Orange liquid

**Color:** Orange

**State:** Liquid

**Odor Characteristics:** N/A

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	0.2 - 0.4
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	< 0.1 - 0.3
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.1

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

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PRODUCT NAME: Poppy Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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PRODUCT NAME: Poppy Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum:

Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum:

Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum:

Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum:

Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum:

Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Poppy Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 9.6

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.5



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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Raw Clear Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Raw Clear Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** White liquid

**Color:** White

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt	1307-96-6		0.02 mg/m <sup>3</sup>	< 0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.3

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

672 Fiesta Drive  
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304-387-1300

PRODUCT NAME: Raw Clear Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Raw Clear Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cobalt are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A



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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Raw Clear Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 19.1  
Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.5

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PRODUCT NAME:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Sage Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Sage Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Green liquid

**Color:** Green

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.5 - 0.9
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	0.9 - 1.8
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	0.5 - 0.7

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

Homer Laughlin China Company

672 Fiesta Drive  
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304-387-1300

PRODUCT NAME: Sage Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None

**Medical Conditions Aggravated by Exposure:** None

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.



Homer Laughlin China Company

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Sage Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum:

Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum:

Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum:

Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Nickel, and Cobalt are carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum:

Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum:

Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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PRODUCT NAME: Sage Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 12.5

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 4.5

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

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PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Scarlet Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Scarlet Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Red liquid

**Color:** Red

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	< 0.1
Selenium	7782-49-2		2.0 mg/m <sup>3</sup>	< 0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.0

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None



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PRODUCT NAME: Scarlet Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum:

PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum:

PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum:

PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum:

PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Scarlet Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

Homer Laughlin China Company

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PRODUCT NAME: Scarlet Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 7.9

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.8

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Shamrock Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Shamrock Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Green liquid

**Color:** Green

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.8 - 1.6

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Shamrock Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum:

PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum:

PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum:

PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum:

PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Shamrock Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Chromium is considered a carcinogen.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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PRODUCT NAME: Shamrock Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 16.9

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.4

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Slate Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Slate Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Gray liquid

**Color:** Gray

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	1.8 - 3.6
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	0.6 - 1.2
Nickel Oxide	1313-99-1		1.5 mg/m <sup>3</sup>	0.8 - 1.0

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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304-387-1300

PRODUCT NAME: Slate Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Slate Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum:

Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired using a kiln.

**10. HANDLING AND STORAGE**

See Addendum:

Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum:

Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica, Cobalt, and Nickel are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum:

Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum:

Ref. PAGE:

**DOT Classification:** Non-hazardous mixtures

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Slate Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

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KEY NUMBER:

### 3. INGREDIENTS - Ref. Pg. 1

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 15.7

Tin Oxide - CAS#: 18282-10-5; TLV: 2.0 mg/m<sup>3</sup>; Approx. %: 1.5

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PRODUCT CODE:

KEY NUMBER:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Sunflower Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

672 Fiesta Drive

Newell, West Virginia 26050

304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

-

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Sunflower Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Yellow liquid

**Color:** Yellow

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	< 0.1
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	< 0.1
Vanadium Oxide	1314-62-1		0.5 mg/m <sup>3</sup>	< 0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.3

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Sunflower Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum:

PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum:

PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum:

PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum:

PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

Homer Laughlin China Company

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PRODUCT NAME: Sunflower Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

9. SPECIAL PROTECTION INFORMATION

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

10. HANDLING AND STORAGE

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

11. REGULATORY INFORMATION

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

12. TOXICOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

13. ECOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

14. DISPOSAL CONDITIONS

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

15. TRANSPORTATION INFORMATION

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Sunflower Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 19.1

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.3

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

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KEY NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 7 OF

PRODUCT NAME:

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 8 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

**ADDENDUM for Section -**

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Tangerine Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Tangerine Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Orange liquid

**Color:** Orange

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cadmium	7440-43-9		0.002 mg/m <sup>3</sup>	0.6 - 1.1
Selenium	7782-49-2		0.2 mg/m <sup>3</sup>	0.1 - 0.7
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.2

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Tangerine Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

5. HEALTH HAZARD DATA

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

6. FIRST AID MEASURES

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

7. REACTIVITY DATA

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

8. SPILL OR LEAK PROCEDURES

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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PRODUCT NAME: Tangerine Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

9. SPECIAL PROTECTION INFORMATION

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

10. HANDLING AND STORAGE

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

11. REGULATORY INFORMATION

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cadmium are considered carcinogens or probable carcinogens.

12. TOXICOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

13. ECOLOGICAL INFORMATION

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

14. DISPOSAL CONDITIONS

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

15. TRANSPORTATION INFORMATION

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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PRODUCT NAME: Tangerine Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 16.2

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 2.5

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Turquoise Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Turquoise Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Blue liquid

**Color:** Blue

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Vanadium Oxide	1314-62-1		0.5 mg/m <sup>3</sup>	< 0.3
Zinc Oxide	1314-13-2		2.0 mg/m <sup>3</sup>	2.1

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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PRODUCT NAME: Turquoise Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Turquoise Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica is considered a carcinogen.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Turquoise Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 17.0

Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.5



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PRODUCT NAME:

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PRODUCT NAME:

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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME:** Williamsburg Blue Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

Homer Laughlin China Company

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

**1. IDENTIFICATION**

See Addendum:

Ref. PAGE:

**Chemical Name:** Williamsburg Blue Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

**2. PHYSICAL DATA**

See Addendum:

Ref. PAGE:

**Appearance:** Blue liquid

**Color:** Blue

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

**3. INGREDIENTS - HAZARDOUS**

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Cobalt Oxide	1308-06-1		0.02 mg/m <sup>3</sup>	0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	4.6

**4. FIRE AND EXPLOSION HAZARD DATA**

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits in Air % by volume:** Lower N/A  
Upper

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Williamsburg Blue Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum: PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum: PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum: PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum: PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Williamsburg Blue Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum: Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum: Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum: Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica and Cobalt are considered carcinogens or probable carcinogens.

**12. TOXICOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum: Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum: Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum: Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A



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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Williamsburg Blue Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 19.1

Zinc Oxide - CAS#: 1314-13-2; TLV: 2.0 mg/m<sup>3</sup>; Approx. %: 4.6

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

PRODUCT CODE:

KEY NUMBER:

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MATERIAL SAFETY DATA SHEET PAGE #: 6 OF

PRODUCT NAME:

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MSDS DATE:

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KEY NUMBER:

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PRODUCT NAME:

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MATERIAL SAFETY DATA SHEET PAGE #: 9 OF

PRODUCT NAME:

MSDS NUMBER:

MSDS DATE:

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**ADDENDUM for Section -**

# MATERIAL SAFETY DATA SHEET

PAGE #: 1 OF 4

**PRODUCT NAME:** Williamsburg Yellow Glaze

**MSDS NUMBER:**

**PRODUCT CODE:**

**MSDS DATE:** 05/27/2015

**KEY NUMBER:**

**EMERGENCY PHONE #'s:**

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304-387-1300

**HEALTH**

**1**

Slightly Hazardous

**FIRE**

**0**

Will Not Burn

**REACTIVITY**

**0**

Stable

**SPECIFIC**

## 1. IDENTIFICATION

See Addendum:

Ref. PAGE:

**Chemical Name:** Williamsburg Yellow Glaze

**Chemical Family:** Ceramic glazes

**CAS #:** N/A

**Chemical Formula:** N/A

**CAS Name:** N/A

**Molecular Weight:** N/A

**Synonyms / Common Name:** N/A

**DOT Information:** N/A

## 2. PHYSICAL DATA

See Addendum:

Ref. PAGE:

**Appearance:** Yellow liquid

**Color:** Yellow

**State:** Liquid

**Odor Characteristics:** No odor

**pH:** N/A

**Viscosity:** N/A

**Specific Gravity (Water = 1):** Less than 1.8

**Vapor Density (Air = 1):** N/A

**Vapor Pressure:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Flash Point:** Not flammable

**Freezing Point:** N/A

**Percent Volatility:** N/A

**Evaporation Rate (BAC = 1):** N/A

**Solubility in Water:** Partial

**Solubility in Oil:** N/A

**Solubility in Acetone:** N/A

## 3. INGREDIENTS - HAZARDOUS

See Addendum:

Ref. PAGE: 4

Material / Components	CAS #:	CAS Name	TLV Units	Approx. %
Chromium Oxide	1308-38-9		0.5 mg/m <sup>3</sup>	< 0.1
Zinc Oxide	1314-13-2		5.0 mg/m <sup>3</sup>	2.3

## 4. FIRE AND EXPLOSION HAZARD DATA

See Addendum:

Ref. PAGE:

**Flash Point:** Not flammable

**Flammable Limits** Lower Upper  
in Air % by volume: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** None

**Unusual Fire & Explosion Hazards:** None

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MATERIAL SAFETY DATA SHEET PAGE #: 2 OF 4

PRODUCT NAME: Williamsburg Yellow Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**5. HEALTH HAZARD DATA**

See Addendum:

PAGE #:

**Threshold Limit Value:** This is a non-hazardous material. The recommended TLV for nuisance dust is 15 mg/m<sup>3</sup>.

**Effects of Overexposure:**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** May cause irritation.

**Delayed Effects:** None known

**Medical Conditions Aggravated by Exposure:** None known

**6. FIRST AID MEASURES**

See Addendum:

PAGE #:

**Inhalation:** Remove from exposure and into fresh air.

**Skin Contact:** Wash contacted area with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. If the irritation persists, contact a physician.

**Ingestion:** Contact a physician if an irritation persists.

**NOTES TO PHYSICIAN:** None

**7. REACTIVITY DATA**

See Addendum:

PAGE #:

**Stability:** Stable

**Incompatibility:** None  
(materials to avoid)

**Hazardous Combustion or Decomposition Products:** None

**Hazardous Polymerization:** None

**Conditions to Avoid:** Fumes released from firing in a kiln; Mist created from spraying

**8. SPILL OR LEAK PROCEDURES**

See Addendum:

PAGE #:

**Actions to take for Leaks & Spills:** Follow federal, state, and local clean-up procedures.

**Waste Disposal Method:** Follow federal, state, and local regulations.



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MATERIAL SAFETY DATA SHEET PAGE #: 3 OF 4

PRODUCT NAME: Williamsburg Yellow Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**9. SPECIAL PROTECTION INFORMATION**

See Addendum:

Ref. PAGE:

**Respiratory Protection:** Use a NIOSH-approved respirator if spraying and adequate ventilation is not available.

**Eye Protection:** Wear safety goggles if spraying and adequate ventilation is not available.

**Skin Protection:** Not needed

**Other Clothing:** N/A

**Other Equipment:** N/A

**Engineering Controls:** Ventilation, if sprayed or fired in a kiln.

**10. HANDLING AND STORAGE**

See Addendum:

Ref. PAGE:

**Special Precautions:** None

**Other Precautions:** N/A

**11. REGULATORY INFORMATION**

See Addendum:

Ref. PAGE:

**Workplace Classification:** All ingredients of this product are listed on the U.S. TSCA Inventory; SARA Section 313 Toxic Chemicals: None; IARC, OSHA, and NTP: Crystalline Silica is considered a carcinogen.

**12. TOXICOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Acute Data:** N/A

**Reproductive /  
Teratology Data** N/A

**13. ECOLOGICAL INFORMATION**

See Addendum:

Ref. PAGE:

**Fate in the Environment:** N/A

**14. DISPOSAL CONDITIONS**

See Addendum:

Ref. PAGE:

**Procedures:** Follow standard local, state, and federal regulations.

**15. TRANSPORTATION INFORMATION**

See Addendum:

Ref. PAGE:

**DOT Classification:** Non-hazardous mixture

**Warning Labels:** N/A

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304-387-1300

MATERIAL SAFETY DATA SHEET PAGE #: 4 OF 4

PRODUCT NAME: Williamsburg Yellow Glaze

MSDS NUMBER:

MSDS DATE: 05/27/2015

PRODUCT CODE:

KEY NUMBER:

**3. INGREDIENTS - Ref. Pg. 1**

Crystalline Silica - CAS#: 14808-60-7; TLV: 0.025 mg/m<sup>3</sup>; Approx. %: 18.9  
Zinc Oxide - CAS#: 1314-13-2; TLV: 2.0 mg/m<sup>3</sup>; Approx. %: 2.3  
Zirconium Silicate - CAS#: 14940-68-2; TLV: 5.0 mg/m<sup>3</sup>; Approx. %: 1.5

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MATERIAL SAFETY DATA SHEET PAGE #: 5 OF

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PRODUCT NAME:

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# Attachment I

---

## Emission Units Table

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**



**Attachment I**  
**Emission Units Table**

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type and Date of Change	Control Device
005-0G	01U	#6 One Fire Line #6 Booth 2 Manufacturer: Phaltzgraff	2016(Proposed)	31 GAL/HR 271,560 GAL/YR GLAZE 1.46TPH 13,000TPY GREENWARE	New	01A

# Attachment J

---

## Emission Points Data Summary Sheet

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data															
Emission Point ID No. <i>(Must match Emission Units Table &amp; Plot Plan)</i>	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point <i>(Must match Emission Units Table &amp; Plot Plan)</i>		Air Pollution Control Device <i>(Must match Emission Units Table &amp; Plot Plan)</i>		Vent Time for Emission Unit <i>(chemical processes only)</i>		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup>  <i>(Speciate VOCs &amp; HAPS)</i>	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase  <i>(At exit conditions, Solid, Liquid or Gas/Vapor)</i>	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> <i>(ppmv or mg/m<sup>4</sup>)</i>
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
01U	Stack	005-0G	#6 One Fire Line #6 Booth 2	01A	Wet Collector	N/A	N/A	PM	239.76	762.42	0.26	1.68	GAS	MB	21.92
								Cd			0.0002	0.001			0.29
								Cr			0.0054	0.047			0.46
								Co			0.0034	0.030			0.23
								Mn			0.0020	0.009			0.17
								Ni			0.0027	0.012			0.01
								Se			0.0002	0.001			0.01

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- <sup>1</sup> Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- <sup>2</sup> Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- <sup>3</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. **DO NOT LIST** H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
- <sup>4</sup> Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- <sup>5</sup> Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- <sup>6</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- <sup>7</sup> Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m<sup>3</sup>) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO<sub>2</sub>, use units of ppmv (See 45CSR10).

**Attachment J**  
**EMISSION POINTS DATA SUMMARY SHEET**

Table 2: Release Parameter Data								
Emission Point ID No. <i>(Must match Emission Units Table)</i>	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow <sup>1</sup> (acfm) <i>at operating conditions</i>	Velocity (fps)	Ground Level <i>(Height above mean sea level)</i>	Stack Height <sup>2</sup> <i>(Release height of emissions above ground level)</i>	Northing	Easting
01U	1.2	70	3,150	49	710	35	4996.1	532.81

<sup>1</sup> Give at operating conditions. Include inerts.  
<sup>2</sup> Release height of emissions above ground level.

# Attachment M

---

## Air Pollution Control Device Sheet

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

**Attachment M**  
**Air Pollution Control Device Sheet**  
(WET COLLECTING SYSTEM-SCRUBBER)

Control Device ID No. (must match Emission Units Table): 01A

**Equipment Information**

1. Manufacturer: Homer Laughlin China Company  Model No.	2. Method: <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Packed Bed</td> <td><input type="checkbox"/> Venturi</td> </tr> <tr> <td><input type="checkbox"/> Spray Tower</td> <td><input type="checkbox"/> Cyclone</td> </tr> <tr> <td><input type="checkbox"/> Mechanical</td> <td><input type="checkbox"/> Orifice</td> </tr> <tr> <td colspan="2"><input checked="" type="checkbox"/> Other, specify</td> </tr> </table>	<input type="checkbox"/> Packed Bed	<input type="checkbox"/> Venturi	<input type="checkbox"/> Spray Tower	<input type="checkbox"/> Cyclone	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Orifice	<input checked="" type="checkbox"/> Other, specify	
<input type="checkbox"/> Packed Bed	<input type="checkbox"/> Venturi								
<input type="checkbox"/> Spray Tower	<input type="checkbox"/> Cyclone								
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Orifice								
<input checked="" type="checkbox"/> Other, specify									
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.									
4. Provide a scale diagram of the scrubber showing internal construction. Please include packing type and size, spray configurations, baffle plates, and mist eliminators.									
5. What type of liquid entrainment eliminators or system will be used? Submit a schematic diagram showing thickness, mesh, and material of construction.									
6. Describe the scrubber's construction material: Wet Collection									
7. What will be the power requirements of the collector?  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Fan</td> <td style="text-align: center;">10</td> <td style="text-align: center;">HP</td> <td style="text-align: center;">Inlet scrubbing liquid pump:</td> <td style="text-align: center;">&lt;0.5</td> <td style="text-align: center;">HP</td> </tr> </table>		Fan	10	HP	Inlet scrubbing liquid pump:	<0.5	HP		
Fan	10	HP	Inlet scrubbing liquid pump:	<0.5	HP				
8. What type of fan(s) will be used?  Type of fan blade: _____ Number of blades: N/A Diameter of blade: N/A in. Also supply a fan curve for each fan to be used.									
9. Estimated gas pressure drop at maximum flow rate: 10 inches H <sub>2</sub> O									

**Scrubbing Liquor Characteristics**

10. Scrubbing Liquor <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 50%; text-align: center;">Composition</th> <th style="width: 50%; text-align: center;">Weight %</th> </tr> </thead> <tbody> <tr> <td>1 Water</td> <td style="text-align: center;">50-100%</td> </tr> <tr> <td>2 Captured Glaze</td> <td style="text-align: center;">0-50%</td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>4</td> <td></td> </tr> </tbody> </table>	Composition	Weight %	1 Water	50-100%	2 Captured Glaze	0-50%	3		4		11. Scrubbing liquor losses (evaporation, etc.): Unknown gal/1000 ACF gas
Composition	Weight %										
1 Water	50-100%										
2 Captured Glaze	0-50%										
3											
4											
12. Liquor pressure to scrubber: 10 to 30 PSIA											
13. Pressure drop through scrubber: 10 in. H <sub>2</sub> O											
14. Source of liquor (explain): City Water / Glaze Overspray	15. Liquor flow rates to scrubber: Design maximum: Variable gal/min Average expected: Variable gal/min										
16. Describe system to be used to supply liquor to collector: Liquid level controller											

17. Give the expected solids content of the liquor:  
0-20%

18. If the liquor is to be recirculated, describe any treatment performed:  
None.

19. Data for Venturi Scrubber:  Throat Dimensions: (Specify Units)  Throat Velocity:                                 ft/sec	20. Data for Packed Towers:  Type of Packing:  Superficial Gas Velocity through Bed:
--	--

**Gas Stream Characteristics**

21. Gas flow into the collector:  3,150      ACF @ 70      °F and 14.7      PSIA	22. Gas stream temperature:  Inlet: 70            °F Outlet: 70           °F
--	---

23. Gas flow rate:  Design Maximum: 4,000                    ACFM Average Expected: 3,150                   ACFM	24. Particulate Grain Loading in grains/scf:  Inlet:  Outlet:
---	---

25. Emission rate of each pollutant (specify) into and out of collector:					
Pollutant	IN		OUT		Guaranteed Minimum Collection Efficiency
	lb/hr	grains/acf	lb/hr	grains/acf	
A PM10			0.26		98.9%
B Cd			0.0002		
C Cr			0.0054		
D Co			0.0034		
E Mn			0.0020		
F Ni			0.0027		
G Se			0.0002		

26. Type of pollutant(s) controlled:     SO<sub>x</sub>                                  Odor  
 Particulate (type):                                  Other:



27. By what method were the uncontrolled emissions calculated?  Material Balance  Stack Test  
 Pilot Test  Other:

28. Dimensions of stack: Height 35 ft. Diameter 1.2 ft

29. Supply an equilibrium curve and/or solubility data (at various temperatures) for the proposed system. N/A

30. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 100 percent of design rating of collector. N/A

**Particulate Distribution**

31. Complete the table: Particulate Size Range (microns)	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
	Weight % for Size Range	Weight % for Size Range
0 – 2	Unknown	Unknown
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

32. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):  
None.

33. Describe the collection material disposal system:  
Drains to glaze reclaim tank and is reused to make up new glaze. No waste is generated during operation. Daily washdown of the spray booth generates wastewater, which is discharged to a permitted wastewater treatment plant.

34. Have you included **Wet Collecting (Scrubber) Control Device** in the Emissions Points Data Summary Sheet?

**35. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING:**  
Monitoring of Control Device 01A will be conducted in accordance with the monitoring requirements for the existing wet collectors at this facility, as outlined in the current facility Operating Permits.

**RECORDKEEPING:**  
Recordkeeping of Control Device 01A will be conducted in accordance with the recordkeeping requirements for the existing wet collectors at this facility, as outlined in the current facility Operating Permits.

**REPORTING:**  
Reporting of Control Device 01A will be conducted in accordance with the reporting requirements for the existing wet collectors at this facility, as outlined in the current facility Operating Permits.

**TESTING:**  
Testing of Control Device 01A will be conducted in accordance with the testing requirements for the existing wet collectors at this facility, as outlined in the current facility Operating Permits.

**MONITORING:** Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.  
**RECORDKEEPING:** Please describe the proposed recordkeeping that will accompany the monitoring.  
**REPORTING:** Please describe any proposed emissions testing for this process equipment on air pollution control device.  
**TESTING:** Please describe any proposed emissions testing for this process equipment on air pollution control device.

36. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.  
None.

37. Manufacturer's Guaranteed Control Efficiency for each air pollutant.  
None.

38. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.  
None.



# Attachment N

---

## Supporting Emissions Calculations

R13 -2164D Permit Application for Class II Administrative Update

**1/4/2016**

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# ATTACHMENT N SUPPORTING EMISSION CALCULATIONS

## Methods for Emission Calculations

As justified below, the Efficiency Coefficients used for calculations of emissions for glaze operations will be 25.6% for T.E. and 72.8% for S.F.

The following formulas are used for calculation of pollutant emissions:

For uncontrolled emissions and glaze reaching collector,

$$\text{lb} \frac{\text{PM}}{\text{hr}}_{\text{Collector}} = \text{Glaze Mix} \left( \frac{\text{gal}}{\text{day}} \right) \times \text{S.G.} \times \rho_{\text{H}_2\text{O}} \left( \frac{\text{lb}}{\text{gal}} \right) \times \frac{\text{Solids}}{\text{Glaze Mix}} \left( \frac{\text{lb}}{\text{lb}} \right) \times \frac{1 \text{ day}}{24 \text{ hours}} \times (1-\text{T.E.}) \times (1-\text{S.F.})$$

with,

S.G. = Specific Gravity of Glaze

$$\rho_{\text{H}_2\text{O}} \left( \frac{\text{lb}}{\text{gal}} \right) = \text{Density of Water}$$

T.E. = Transfer Efficiency

S.F. = Settling Factor.

For controlled emissions,

$$\text{lb} \frac{\text{PM}}{\text{hr}}_{\text{Atmosphere}} = \text{lb} \frac{\text{PM}}{\text{hr}}_{\text{collector}} \left( \frac{\text{lb}}{\text{hr}} \right) \times (1-\text{C.E.})$$

with,

C.E. = Collector Efficiency.

For total emissions in a calendar year,

$$\text{Ton} \frac{\text{PM}}{\text{yr}}_x = \text{lb} \frac{\text{PM}}{\text{hr}}_x \left( \frac{\text{lb}}{\text{hr}} \right) \times \frac{1 \text{ Ton}}{2000 \text{ lb}} \times \frac{8760 \text{ hr}}{\text{yr}}$$

Each glaze color formula has varying concentrations of the following Hazardous Air Pollutants:

Co, Cr, Ni, Mn, Cd and Se. For calculation of the potential HAP emissions for each spray operations, the glaze formula with the highest concentration of a particular HAP is used. The following formulas are used for individual HAP potential emissions:

$$\text{lb} \frac{\text{HAP}}{\text{hr}}_{\text{Atmosphere}_x} = \text{lb} \frac{\text{PM}}{\text{hr}}_{\text{Atmosphere}} \left( \frac{\text{lb}}{\text{hr}} \right) \times \frac{\text{lb HAP}}{\text{lb solid}_x}$$

with,  $x = \text{Co, Cr, Ni, Mn, Cd, and Se.}$

$\frac{\text{lb HAP}}{\text{lb solid}_x} \left( \frac{\text{lb}}{\text{lb}} \right)$  was provided by the HLC Ceramic Engineering Department.

$$\text{Ton} \frac{\text{HAP}}{\text{yr Atmosphere}_x} = \text{lb} \frac{\text{HAP}}{\text{hr Atmosphere}_x} \left( \frac{\text{lb}}{\text{hr}} \right) \times \frac{8760 \text{ hr}}{\text{yr}} \times \frac{1 \text{ Ton}}{2000 \text{ lb}}$$

## Glaze Reclaim Mass Balance

Two tests were conducted in 2001 to determine the potential for glaze reclamation. The results of these tests provide a mass balance allowing calculation of actual transfer efficiencies and settling factors as compared to estimates that were used in the past. Below Table 1 Glaze Reclaim Test Summary summarizes the results of the tests conducted on source ID 005-0D (#6 One Fire Line #3).

**Table 1 Glaze Reclaim Test Summary**

	<b>Test1</b> <b>Date 3/26/01</b>		<b>Test2</b> <b>Date 10/3/01</b>	
	Weight Solid (lb)	% Glaze Consumed =Source/Total Consumed	Weight Solid (lb)	% Glaze Consumed =Source/Total Consumed
Source				
Total Consumed	548.6		483.9	
Ware Application	144.9	26.4%	124.0	25.6%
Booth/Baffles	350.1	63.8%	262.4	54.2%
Spindle Wash Solid	14.0	2.6%	Not Measured Independently	
Collector and Spindle Wash Liquid	Measured Independently		80.3	16.6%
Collector Liquid	19.8	3.6%	Not Measured Independently	
Collector Solid	18.8	3.4%	10.0	2.1%
Unaccounted	1.0	0.2%	7.3	1.5%
Glaze Not Reaching Collector (Booth/Baffles/Spindle Wash)	364.1	66.4%	262.4	54.2%
Glaze Available for Reclaim	402.7	99.8%	352.7	98.0%

Calculation of Transfer Efficiency (T.E.)

$$\text{T.E. (Transfer Efficiency)} = \frac{\text{Ware Application (lbs)}}{\text{Consumed Glaze (lbs)}}$$

$$\text{T.E. (Transfer Efficiency)}_{\text{Test1}} = \frac{144.9(\text{lbs})}{548.6(\text{lbs})} = 26.4\%$$

$$\text{T.E. (Transfer Efficiency)}_{\text{Test2}} = \frac{124(\text{lbs})}{483.9(\text{lbs})} = 25.6\%$$

Calculation of Settling Factor (S.F.)

$$\text{S.F.} = \frac{\text{Glaze Not Reaching Collector (lbs)}}{\text{Consumed Glaze (lbs)} \times (1-\text{T.E.})}$$



$$\text{S.F.}_{\text{Test1}} = \frac{364.1 \text{ (lbs)}}{548.6 \text{ (lbs)} \times (1-.264)} = 90.2\%$$

$$\text{S.F.}_{\text{Test2}} = \frac{262.4 \text{ (lbs)}}{262.4 \text{ (lbs)} \times (1-.256)} = 72.9\%$$

A S.F. of 90.2% calculated in Test 1 is used for all calculations of glazing operations for this Administrative Update. The S.F. calculated in Test 2 is not accurate since the Collector Solids and Spindle Wash were measured together and therefore lower the actual S.F.

The lowest T.E. calculated in Test 2 is used for all calculations of glazing operation for this Administrative Update, although as shown below, the actual mean T.E. is higher.

**Table 2 Potential Emissions and Limits Based on Emission Factors Derived from Material Balance**

Equipment Name	Source Id	Control Device	Transfer Efficiency	Collector Efficiency	Building Capture Efficiency	Settling Factor	Effective Emissions Factor	Limit (Maximum S.G.)	Limit (Solid Content)	Limit (gal/hr)	Limit(gal)
Spray Operations											
No. 5 Spray Booth D	005-06	00R	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 5 Spray Booth A	005-0A	00V	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 5 Spray Booth B	005-0E	00Z	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 5 Spray Booth C	005-02	00P	25.6%	98.9%		90.2%	0.08%	1.80	69.2%	31.00	271560.00
No. 6 Line 5	005-03	00Q	25.6%	98.9%		90.2%	0.08%	1.80	69.2%	31.00	271560.00
No. 6 Line 2	005-0F	CEN-015	25.6%	98.9%		90.2%	0.08%	1.80	69.2%	31.00	271560.00
No. 6 Line 3	005-0D	00Y	25.6%	98.9%		90.2%	0.08%	1.80	69.2%	31.00	271560.00
No. 6 Line 6 Booth 1	005-08	00F	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 6 Line 6 Booth 2	005-0G	01A	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 6 Line 8	005-09	00G	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 6 Line 10	005-07	00E	25.6%	97.8%		90.2%	0.16%	1.80	69.2%	31.00	271560.00
No. 8 Line 1	005-0B	00W	25.6%	98.9%		90.2%	0.08%	1.80	69.2%	31.00	271560.00
No. 5 Crankwash	009-01	00N	60.0%	96.4%	70%	40.0%	0.86%	1.90	69.2%	5.00	43800.00
No. 7 Crankwash	009-02	00C	60.0%	96.4%		40.0%	0.86%	1.90	69.2%	5.00	43800.00

	PM (tons) Uncontrolled	PM (lbs/hr) Uncontrolled	PM (tons) Controlled	Limit PM (tons)	PM (lbs/hr) Controlled	Limit PM (hr)	Co (tons)	Limit (TPY)	lb/hr	Limit (lbs/hr)	Cr(tons)	Limit(TPY)	lb/hr	Limit (lbs/hr)	Ni(tons)	Limit (TPY)	lb/hr	Limit (lbs/hr)	Mn(tons)	Limit (TPY)	lb/hr	Limit (lbs/hr)	Cd(tons)	Limit (TPY)	lb/hr	Limit (lbs/hr)	Se (tons)	Limit (TPY)	lb/hr	Limit (lbs/hr)
									lbs HAP/gal	0.136			lbs HAP/gal	0.218			lbs HAP/gal	0.109			lbs HAP/gal	0.080			lbs HAP/gal	0.007			lbs HAP/gal	0.007
									lbs HAP/lb solid	0.0131			lbs HAP/lb solid	0.0209			lbs HAP/lb solid	0.0104			lbs HAP/lb solid	0.0077			lbs HAP/lb solid	0.0007			lbs HAP/lb solid	0.0007
005-06	1050.13	239.76	2.26	1.90	0.52	0.43	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-0A	1050.13	239.76	2.26	1.68	0.52	0.38	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-0E	1050.13	239.76	2.26	1.68	0.52	0.38	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-02	1050.13	239.76	1.13	6.12	0.26	1.40	0.015		0.0034		0.024		0.0054		0.012		0.0027		0.009		0.0020		0.001		0.0002		0.001		0.0002	
005-03	1050.13	239.76	1.13	1.68	0.26	0.38	0.015		0.0034		0.024		0.0054		0.012		0.0027		0.009		0.0020		0.001		0.0002		0.001		0.0002	
005-0F	1050.13	239.76	1.13	5.50	0.26	1.27	0.015		0.0034		0.024		0.0054		0.012		0.0027		0.009		0.0020		0.001		0.0002		0.001		0.0002	
005-0D	1050.13	239.76	1.13	5.08	0.26	1.16	0.015		0.0034		0.024		0.0054		0.012		0.0027		0.009		0.0020		0.001		0.0002		0.001		0.0002	0.10
005-08	1050.13	239.76	2.26	3.92	0.52	0.90	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-0G	1050.13	239.76	2.26	3.92	0.52	0.90	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-09	1050.13	239.76	2.26	3.57	0.52	0.81	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-07	1050.13	239.76	2.26	3.56	0.52	0.90	0.030		0.0068		0.047		0.0108		0.024		0.0054		0.017		0.0040		0.002		0.0003		0.002		0.0003	
005-0B	102.91	23.50	1.13	0.58	0.26	0.21	0.015		0.0034		0.024		0.0054		0.012		0.0027		0.009		0.0020		0.001		0.0002		0.001		0.0002	
009-01	96.12	21.95	0.62	2.51	0.14	0.58																								
009-02	96.12	21.95	2.08	2.51	0.47	0.58																								
			24.21	44.21		1.14	0.28				0.45				0.22				0.17			0.01				0.01				
			<b>TOTAL PM (TONS)</b>	<b>PM LIMIT (TONS)</b>		<b>TOTAL HAP (TONS)</b>	<b>TOTAL Co (TONS)</b>				<b>TOTAL Cr (TONS)</b>				<b>TOTAL Ni (TONS)</b>				<b>TOTAL Mn (TONS)</b>			<b>TOTAL Cd (TONS)</b>				<b>TOTAL Se (TONS)</b>				

# Attachment P

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## Public Notice

R13 -2164D Permit Application for Construction of Stationary Source

**1/4/2016**

# AIR QUALITY PERMIT NOTICE

## Notice of Application

Notice is given that The Homer Laughlin China Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a R13 -2164D Permit Application for Construction of Stationary Source for a ware glazing operations and associated equipment located on 672 Fiesta Drive), in Newell, Hancock County, West Virginia. The latitude and longitude coordinates are: latitude 40.620593° and longitude -80.607550°.

The applicant estimates the increase potential to discharge the following Regulated Air Pollutants annually will be:

2.27 Tons Particulates  
0.047 Tons Cr  
0.024 Tons Ni  
0.017 Tons Mn  
0.002 Tons Cd  
0.002 Tons Se

Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 18th day of January, 2016.

By: The Homer Laughlin China Company  
Sean Adkins  
Chief Engineer  
672 Fiesta Drive  
Newell, WV 26034

# Attachment P

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## Public Notice

R13 -2164D Permit Application for Construction of Stationary Source

**1/4/2016**

# AIR QUALITY PERMIT NOTICE

## Notice of Application

Notice is given that The Homer Laughlin China Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a R13 -2164D Permit Application for Construction of Stationary Source for a ware glazing operations and associated equipment located on 672 Fiesta Drive), in Newell, Hancock County, West Virginia. The latitude and longitude coordinates are: latitude 40.620593° and longitude -80.607550°.

The applicant estimates the increase potential to discharge the following Regulated Air Pollutants annually will be:

2.27 Tons Particulates  
0.047 Tons Cr  
0.024 Tons Ni  
0.017 Tons Mn  
0.002 Tons Cd  
0.002 Tons Se

Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 18th day of January, 2016.

By: The Homer Laughlin China Company  
Sean Adkins  
Chief Engineer  
672 Fiesta Drive  
Newell, WV 26034

# PROOF OF PUBLICATION

## Newspaper Clipping

### Legals

#### LEGAL NOTICE AIR QUALITY PERMIT NOTICE

##### Notice of Application

Notice is given that The Homer Laughlin China Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update for a ware glazing operation and associated equipment located on 672 Fiesta Drive, in Newell, Hancock County, West Virginia. The latitude and longitude coordinates are: latitude 40.620593° and longitude -80.607550°.

The applicant estimates the increased-potential to discharge the following Regulated Air Pollutants annually will be:

2.27 Tons Particulates  
0.047 Tons Cr  
0.024 Tons Ni  
0.017 Tons Mn  
0.002 Tons Cd  
0.002 Tons Se

Startup of operation is planned to begin on or about 4th day of April, 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 18th day of January, 2016.

By: The Homer Laughlin China Company  
Sean Adkins  
Chief Engineer  
672 Fiesta Drive  
Newell, WV 26034

Published in The Review, January 18, 2016.

The State of Ohio,  
Columbiana County,

Lisa Ludovici being duly sworn, says that she is the Ad Manager at The Review, a newspaper printed, published and of general circulation in the said County of Columbiana; that the notice, of which the attached is a copy, was for a period of one day(s) published in The Review commencing on the 18<sup>th</sup> day of January, 2016 and the last day of publication being The Same, 2016.

Lisa Ludovici  
Subscribed by the said Lisa Ludovici and sworn to before me this 21<sup>st</sup> day of January, 2016.

Paula Vaughan  
Notary Public

Printers Fee: \$ 94.32

# Attachment R

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## Authority of Corporation

R13 -2164D Permit Application for Construction of Stationary Source

**1/4/2016**



**Attachment R**  
**AUTHORITY OF CORPORATION**  
**OR OTHER BUSINESS ENTITY (DOMESTIC OR FOREIGN)**

TO: The West Virginia Department of Environmental Protection,  
Division of Air Quality

DATE: July 1, 2014

ATTN.: Director

Corporation's / other business entity's Federal Employer I.D. Number 550215070

The undersigned hereby files with the West Virginia Department of Environmental Protection, Division of Air Quality, a permit application and hereby certifies that the said name is a trade name which is used in the conduct of an incorporated business or other business entity.

Further, the corporation or the business entity certifies as follows:

(1) Sean Adkins (is/are) the authorized representative(s) and in that capacity may represent the interest of the corporation or the business entity and may obligate and legally bind the corporation or the business entity.

(2) The corporation or the business entity is authorized to do business in the State of West Virginia.

(3) If the corporation or the business entity changes its authorized representative(s), the corporation or the business entity shall notify the Director of the West Virginia Department of Environmental Protection, Division of Air Quality, immediately upon such change.

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President or Other Authorized Officer  
(Vice President, Secretary, Treasurer or other  
official in charge of a principal business function  
of the corporation or the business entity)

(If not the President, then the corporation or the business entity must submit certified minutes or bylaws stating legal authority of other authorized officer to bind the corporation or the business entity).

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Secretary

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The Homer Laughlin China Company  
Name of Corporation or business entity